

Name Key

Date _____

Area Problems

Changes #3
Dir #6
#24

1. Rhombus CGDF

FG = 16

CD = 12

DH is an altitude. Find its length.

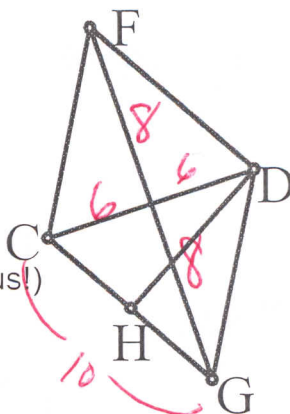
(Remember, Area can be found 2 ways for a rhombus!)

Area = 96

CG = 10

DH = 9.6

$\frac{1}{2} 12 \cdot 16$
 $96 = 10 \cdot h$



- 2.

Trapezoid ABCD

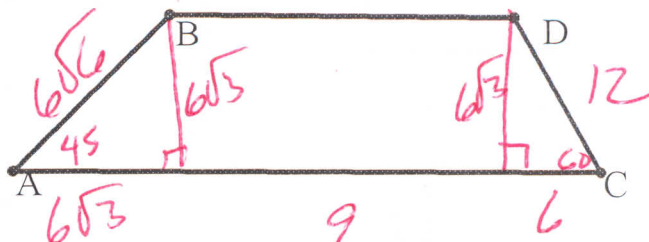
$m\angle BAC = 45^\circ$

$m\angle DCA = 60^\circ$

BD = 9

DC = 12

Find Area and Perimeter.



A = 178.7

P = 61.1

$\frac{1}{2} 6\sqrt{3} (9 + 15 + 6\sqrt{3})$

$P = 9 + 12 + 6 + 9 + 6\sqrt{3} + 6\sqrt{3}$

- 3.

$m\angle CBA = 45^\circ$

\overline{AE} and \overline{CD} are altitudes.

AC = 13

AD = 5

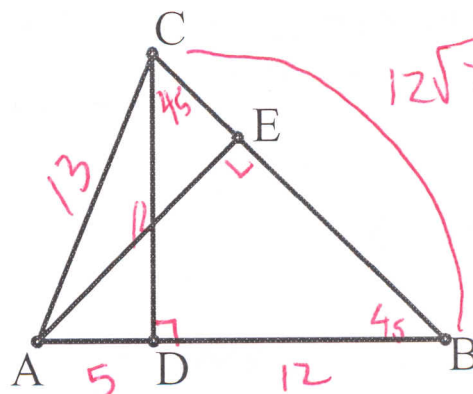
Find CD. 12

Find BD. 12

Find Area. 102

Find AE. 12.02

$BC = 12\sqrt{2}$



$\frac{1}{2} 17 \cdot 12$
 $\frac{102}{6\sqrt{2}}$

$102 = \frac{1}{2} 12\sqrt{2} h$
 $\frac{102}{6\sqrt{2}}$

Review Problems

4. 900m^2 Find the area of a square with one side = 30m.

5. 25yd^2 Find the area of a square with perimeter = 20yds. $\div 4 = 5$

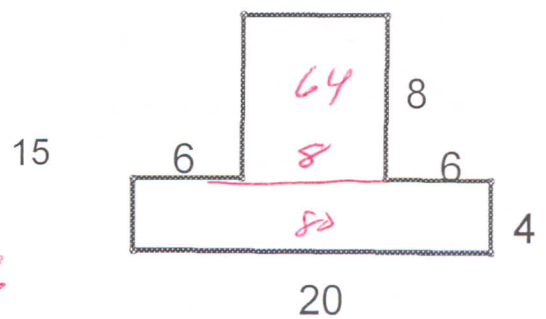
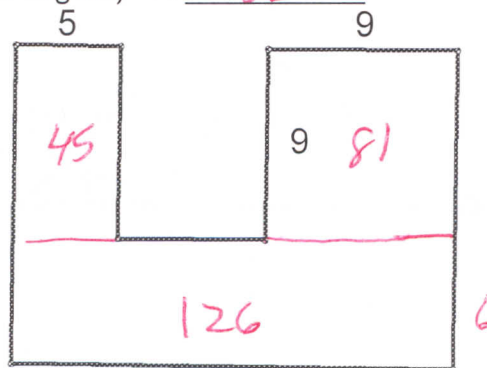
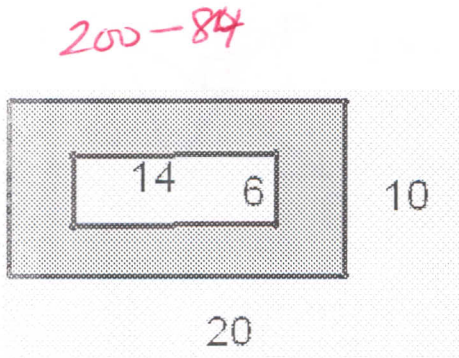
*

Assume consecutive sides are perpendicular. (#s8-10)

Find the ^{area} unless otherwise indicated.

6. 116u^2 (shaded region) 7. 252u^2

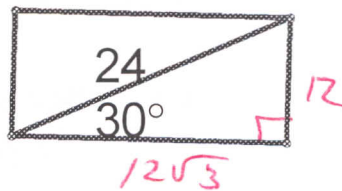
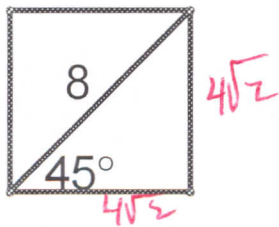
8. 144u^2



9. 32u^2

10. $144\sqrt{3}\text{u}^2$

11. $b = 12\text{cm}$



Rectangle
A = 120cm
h = 10 cm
b =

$\wedge 120 = 10b$
 $12 = b$

12. $b = 16$ $h = 34$

13. $36\sqrt{3}\text{m}^2$

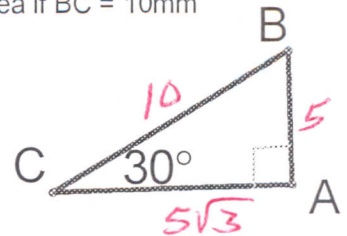
14. $\frac{1}{2}25\sqrt{3}\text{mm}^2$

Rectangle
A = 480cm
h = 30 cm
b = ?
diagonal = ?

Find the area of an
equilateral triangle with
one side = 12m

$\frac{12^2\sqrt{3}}{4}$

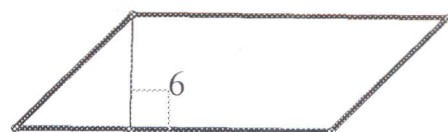
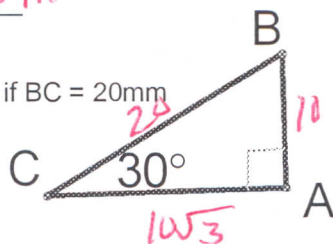
Find the area if BC = 10mm



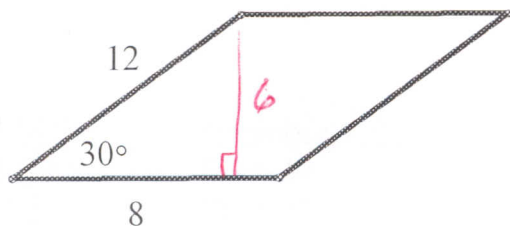
15. $\frac{1}{2}100\sqrt{3}\text{mm}^2$

16. 60u^2

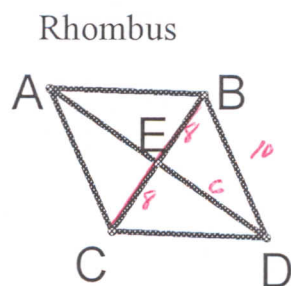
Find the area if BC = 20mm



17. $48u^2$

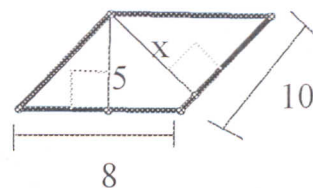


18. $96u^2 \frac{1}{2} 16 \cdot 12$

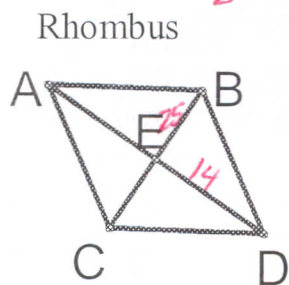


BC = 16
BD = 10

19. Find A = $40u^2$
Find x = 4

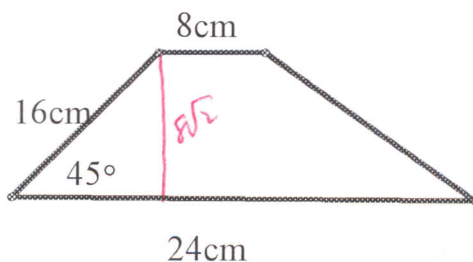


20. $700u^2$
 $\frac{1}{2} 50 \cdot 28$

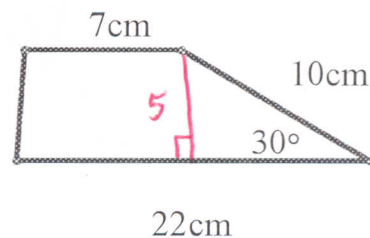


ED = 14
BE = 25

21. $128\sqrt{2} \text{ cm}^2$
 $\frac{1}{2} 8\sqrt{2} (32)$



22. 72.5 cm^2 $\frac{1}{2} 5 (29)$



Find the area of the following **regular polygons** given certain information.

23. $150\sqrt{3} \text{ cm}^2$ Hexagon; side = 10cm; $a = 5\sqrt{3}$

$A = \frac{1}{2} 60 \cdot 5\sqrt{3}$

* 24. $25\sqrt{3} \text{ mm}^2$ Triangle; side = ~~12~~mm ~~100~~

$\frac{100\sqrt{3}}{4}$

25. 128 cm^2 Square; $a = 4\sqrt{2} \text{ cm}$



$(8\sqrt{2})^2$
128

26. 162.4 cm^2 Octagon; $a = 7 \text{ cm}$; side = 5.8cm

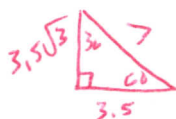
$\frac{1}{2} 7 \cdot 46.4$

27. 200 cm^2 Square; $r = 10 \text{ cm}$



$(5\sqrt{2}) \times 2 = 10\sqrt{2}$
 $100 \cdot 2$

28. $73.5\sqrt{3} \approx 127.3 \text{ cm}^2$ Hexagon; $r = 7 \text{ cm}$



$\frac{1}{2} 3.5\sqrt{3} \cdot 42$